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EXAMINER	
JIANG, SHAOJIA A	

ART UNIT	PAPER NUMBER
1617	15

DATE MAILED: 07/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicati n N .	Applicant(s)	
	09/944,163	SCHALL ET AL.	
	Examin r	Art Unit	
	Shaojia A Jiang	1617	

-- The MAILING DATE of this communication appears n the c ver sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5,7-21 and 29-34* is/are pending in the application.

4a) Of the above claim(s) *14-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5,7-13 and 29-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *11,14* .
4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

DETAILED ACTION

This application claims priority from provisional applications Serial No. 60/228,974, 60/229,191, and 60/229,365.

Election/Restrictions

Applicant's election with traverse of the invention of Group III, Claims 29-34 and the invention of species of octoclothepin in claim 34 in Paper No. 13, submitted May 12, 2003 is acknowledged.

Nonetheless, on consideration by the examiner, the specie election requirement is modified to include all compounds of formula recited in claims 30-34 as a single specie.

The traversal is on the ground(s) that no undue burden is placed upon the Office to search and examine the claims of Group I-III together. This is not found persuasive. However, the traversal is on the ground(s) that inventions Group I and III can be grouped together. This is found persuasive as to Groups Group I and III since Group I is drawn to a method for preventing dissemination of CMV in a human and Group III is drawn to a method for treating CMV in a human. Therefore, the Requirement for Restriction is modified as to Groups I and III. The invention of Group I is herein combined with the invention of Group III.

However, the invention of Group II is independent and distinct from Groups I and III since Group II is drawn to a independent and distinct method for reducing cell motility in a CMV-infected cell. As discussed in the Requirement for Restriction, they have

different functions and different modes of operation. Thus, an undue burden on the Office is seen for the search all inventions herein, as discussed in the Requirement for

The requirement is still deemed proper and is therefore made FINAL.

Claims 14-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or

Claims 5, 7-13, and 29-34 will be examined on the merits herein.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5 and 7-13 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The instant claims are drawn to a method for **preventing** dissemination of CMV in a human. The instant specification fails to provide information that would allow the skilled artisan to practice the instant invention. Attention is directed to *In re Wands*, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman*, 230 USPQ 546 (BdApls 1986) at 547 the court recited eight factors:

(1) the nature of the invention; (2) the state of the prior art; (3) the relative skill of those in the art; (4) the predictability or unpredictability of the art; (5) the breadth of the claims; (6) the amount of direction or guidance presented; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary.

Nature of the invention: The instant invention pertains to the method for preventing dissemination of CMV in a human.

The state of the prior art: The skilled artisan would view that the treatment to prevent dissemination of CMV in a human totally, absolutely, or permanently, is highly unlikely, not even occurring at the first time.

The relative skill of those in the art: The relative skill of those in the art is high.

The predictability or lack thereof in the art: The skilled artisan would view that the treatment to prevent dissemination of CMV in a human totally, absolutely, or permanently is highly unpredictable, and not even occur at the first time is highly unpredictable.

The amount of direction or guidance presented and the presence or absence of working examples: In the instant case, **no** working examples are presented in the specification as filed showing how to prevent dissemination of CMV in a human totally, absolutely, or permanently, not even occurring at the first time.

Genentech, 108 F.3d at 1366, states that "a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable".

Therefore, in view of the *Wands* factors, e.g., the amount of direction or guidance provided, absence of working examples, and the predictability of the art discussed above, to practice the claimed invention herein, a person of skill in the art would have to engage in *undue experimentation* to test all compounds encompassed in the instant claims to be administered to a human employed in the claimed method for the prevention of dissemination of CMV in a human, with no assurance of success.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 29 is rejected under 35 U.S.C. 112, first paragraph, for scope of enablement because the specification, while being enabling for the particular compounds of formula disclosed in the specification and claim 30 for example employed in the claimed methods herein, does not reasonably provide enablement for the employment any compounds which blocks the binding of a chemokine to US28 or a US28 fragment in the particular method for treating CMV infection in a human.

These recitation, "a compound which blocks the binding of a chemokine to US28 or a US28 fragment", is seen to be merely functional language.

The instant specification fails to provide information that would allow the skilled artisan to fully practice the instant invention without ***undue exp rimentation***. Attention

is directed to *In re Wands*, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman*, 230 USPQ 546 (BdApls 1986) at 547 the court recited eight factors:

(1) the nature of the invention; (2) the state of the prior art; (3) the relative skill of those in the art; (4) the predictability or unpredictability of the art; (5) the breadth of the claims; (6) the amount of direction or guidance presented; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary.

The nature of the invention: The instant invention pertains to a method for treating CMV infection in a human.

The relative skill of those in the art: The relative skill of those in the art is high.

The breadth of the claims: The instant claim 29 is deemed very broad since these claims reads on any compounds which blocks the binding of a chemokine to US28 or a US28 fragment employed in the claimed methods of treatment herein.

The amount of direction or guidance presented:

Functional language at the point of novelty, as herein employed by Applicants in claim 29, is admonished in *University of California v. Eli Lilly and Co.* 43 USPQ2d 1398 (CAFC, 1997). The CAFC clearly states that "[A] written description of an invention involving a chemical genus, like a description of a chemical species, requires a precise definition, such as by structure, formula, [or] chemical name, of the claimed subject matter sufficient to distinguish it from other materials" at 1405(emphasis added), and that "It does not define any structural features commonly possessed by members of the

genus that distinguish from others. One skilled in the art therefore cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus. A definition by function, as we have previously indicated, does not suffice to define the genus.." at 1406 (emphasis added).

In the instant case, "a compound which blocks the binding of a chemokine to US28 or a US28 fragment" recited in the instant claims is purely functional distinction. Hence, these functional recitations read on any compounds that might have the recited functions. However, the specification merely provides those particular compounds of formula for the claimed method of treatment herein in claims 30-34.

Thus, Applicants functional language at the points of novelty in claim 29 fails to meet the requirements set forth under 35 U.S.C. 112, first paragraph, since it fails to provide those elements required to practice the inventions, nor "inform the public during the life of the patent of the limited of monopoly asserted" (*General Electric Company v. Wabash Appliance Corporation et al.* 37 USPQ at 468 (US Supreme Court 1938)). The predictability or unpredictability: the instant claimed invention is highly *unpredictable* as discussed below:

It is noted that the pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed for physiological activity. *In re Fisher*, 427 F.2d 833, 166 USPQ 18 (CCPA 1970) indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute. In the instant case, the instant claimed invention is highly unpredictable since one skilled in the art cannot fully described genus, visualize or recognize the identity of the members of the

genus, by structure, formula, or chemical name, of the claimed subject matter, except those particular compounds of formula disclosed in the specification, as discussed above in *University of California v. Eli Lilly and Co.* Hence, in the absence of fully recognizing the identity of the members genus herein, one of skill in the art would be unable to fully predict possible physiological activities of any compounds having claimed functional properties in the claimed method of treatment herein.

Moreover, one of skill in the art would recognize that it is highly unpredictable in regard to therapeutic effects for treatment of CMV infection in a human, side effects, and especially serious toxicity that may be generated when and/or after administering to a human. See text book "Goodman & Gilman's The Pharmacological Basis of Therapeutics" regarding possible adverse effects (9th ed, 1996) page 51 and 57-58. This book teaches that "The frequency of significant beneficial or adverse drug interactions is unknown" (see the bottom of the left column of page 51) and that "Recognition of beneficial effects and recognition of and prevention of adverse drug interactions require a thorough knowledge of the intended and possible effects of drugs that are prescribed" and that "The most important adverse drug-drug interactions occur with drugs that have serious toxicity and a low therapeutic index, such that relatively small changes in drug level can have significant adverse consequences" (see the right column of page 51) (emphases added).

In the instant case, in the absence of fully recognizing the identity of the members genus herein except those particular compounds of formula in the specification, one of skill in the art would not be able to fully predict the possible

treatments herein and possible adverse effects occurring with many compounds having claimed functional properties in the claimed method herein. Thus, the teachings of the "Goodman & Gilman's" book clearly support that the instant claimed invention is highly unpredictable.

The presence or absence of working examples and the quantity of experimentation necessary:

It is noted that only two particular compounds octoclothepin and methiothepin were tested in working Examples in the specification. Thus, the evidence in the examples is also not commensurate in scope with the claimed invention and does not demonstrate criticality of a claimed range of the active compounds in the claimed method. See MPEP § 716.02(d).

Thus, the specification fails to provide clear and convincing evidence in sufficient support of the broad use of any compounds having those functions recited in the instant claims. As a result, necessitating one of skill to perform an exhaustive search for the embodiments of any compounds having those functions recited in the instant claims suitable to practice the claimed invention.

Genentech, 108 F.3d at 1366, states that "a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable".

Therefore, in view of the *Wands* factors, the case *University of California v. Eli Lilly and Co.* (CAFC, 1997) and *In re Fisher* (CCPA 1970) discussed above, to practice

the claimed invention herein, a person of skill in the art would have to engage in *undue experimentation* to test all compounds encompassed in the instant claims to be administered to a human employed in the claimed method of the particular treatments herein, with no assurance of success.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 5 and 29 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 30 of copending Application No. 09/944,049.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending Application is drawn to a method of treating an animal infected with CMV or at risk for infection by CMV, comprising administering to the animal an agent that interferes with the expression or activity of US 28 or a US28 homolog..

The claims of the instant application is drawn to a method for preventing dissemination of CMV in a human and a method for treating CMV infection in a human comprising administering a compound which blocks the binding of a chemokine to US28 or a US28 fragment.

Therefore, one having ordinary skill in the art would clearly recognize that the method the copending Application and the method in the instant application would substantially overlap.

Thus, the instant claims 5 and 29 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 30 of copending Application No. 09/944,049.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Protiva et al. (4,243,805, PTO-892) in view of in view of the Merck Manual of Diagnosis

and Therapy (17th ED) (PTO-892) and Michelson ("AT", PTO-1449 submitted May 12, 2003).

Protiva et al. discloses that the compounds of formula (1) (which are the instant preferred compounds in claims 30-33) have psychotropic and neurotropic activity and are useful as neuroleptics (see abstract, col.1-4 in particular).

Protiva et al. does not expressly disclose the employment of the particular compounds in a method for treating CMV infection in a human.

The Merck Manual of Diagnosis and Therapy (17th ED) teaches that CMV infection is manifested by severe brain damage, CNS damage or CNS involvement in a human. See the right column of page 1295 to the left column of page 1296.

Michelson teaches that CMV infection can cause mental retardation in a human and CMV infects and/or replicates in a wide of variety of cell types, e.g., neurophils (see the left column of page 286).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the particular compounds of formula (1) of Protiva et al. in a method for treating CMV infection in a human.

One having ordinary skill in the art at the time the invention was made would have been motivated to employ the particular compounds of formula (1) of Protiva et al. in a method for treating CMV infection in a human, since these particular compounds are known to have psychotropic and neurotropic activity and useful as neuroleptics according to Protiva et al. It is known that CMV infection is manifested by severe brain damage, CNS damage or CNS involvement in a human, according The Merck Manual

of Diagnosis and Therapy, and it is also known that CMV infection can cause mental retardation in a human and CMV infects and/or replicates in a wide of variety of cell types, e.g., neurophils, according to Michelson.

Therefore, one of ordinary skill in the art would have reasonably expected that the particular compounds of formula (1) of Protiva et al. would have beneficial therapeutic effects in treating CMV infection in a human who suffers severe brain damage, CNS damage, or CNS disorders caused by CMV, since these compounds have psychotropic and neurotropic activity and useful as neuroleptics.

Thus the claimed invention as a whole is clearly prima facie obvious over the combined teachings of the prior art.

Claims 29-34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sindelar et al. (abstract, PTO-892) in view of in view of the Merck Manual of Diagnosis and Therapy (17th ED) (PTO-892) and Michelson ("AT", PTO-1449 submitted May 12, 2003).

Sindelar et al. discloses that the compounds of formula (I), octoclothepin and methiothepin in particular (which are the instant preferred compounds in claims 30-34) have psychotropic and neurotropic activity and are useful as neuroleptics (see title and abstract).

Sindelar et al. does not expressly disclose the employment of the particular compounds in a method for treating CMV infection in a human.

The Merck Manual of Diagnosis and Therapy (17th ED) teaches that CMV infection is manifested by severe brain damage, CNS damage or CNS involvement in a human. See the right column of page 1295 to the left column of page 1296.

Michelson teaches that CMV infection can cause mental retardation in a human and CMV infects and/or replicates in a wide of variety of cell types, e.g., neurophils (see the left column of page 286).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the particular compounds of formula (1) of Sindelar et al. in a method for treating CMV infection in a human.

One having ordinary skill in the art at the time the invention was made would have been motivated to employ the particular compounds of formula (1) of Sindelar et al. in a method for treating CMV infection in a human, since these particular compounds are known to have psychotropic and neurotropic activity and useful as neuroleptics according to Protiva et al. It is known that CMV infection is manifested by severe brain damage, CNS damage or CNS involvement in a human, according The Merck Manual of Diagnosis and Therapy, and it is also known that CMV infection can cause mental retardation in a human and CMV infects and/or replicates in a wide of variety of cell types, e.g., neurophils, according to Michelson.

Therefore, one of ordinary skill in the art would have reasonably expected that the particular compounds of formula (1) of Sindelar et al. would have beneficial therapeutic effects in treating CMV infection in a human who suffers severe brain

damage, CNS damage, or CNS disorders caused by CMV, since these compounds have psychotropic and neurotropic activity and useful as neuroleptics.

Thus the claimed invention as a whole is clearly prima facie obvious over the combined teachings of the prior art.

In view of the rejections to the pending claims set forth above, no claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Jiang, whose telephone number is (703) 305-1008. The examiner can normally be reached on Monday-Friday from 9:00 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreenivasan Padmanabhan, Ph.D., can be reached on (703) 305-1877. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-1235.

S. Anna Jiang, Ph.D.
Patent Examiner, AU 1617
July 23, 2003